

Title (en)
HETEROGENEOUS MEMBRANE AND PROCESS FOR PRODUCTION THEREOF

Publication
EP 0124028 B1 19900314 (EN)

Application
EP 84104417 A 19840418

Priority
JP 6990083 A 19830422

Abstract (en)
[origin: EP0124028A2] A heterogeneous membrane of a thermoplastic crystalline polymer composed of a microporous layer and a nonporous layer and having excellent properties, for example as a diaphragm for separating a gaseous mixture; and a process for production thereof. The heterogeneous membrane is in the form of, for example, a flat film or a tubular film (preferably a hollow fiber). The microporous layer contains pores with a diameter of 0.01 to 50 microns, whereas the nonporous layer does not substantially contain pores having a diameter of at least 30 Å and has a thickness of 0.01 to 1 micron. The heterogeneous membrane is characterized by having at least 3 times as high an apparent oxygen permeability coefficient $P(O_{2\text{app}})$ at 25°C as a nonporous homogeneous membrane of the same material and an oxygen-nitrogen separation coefficient $\alpha(O_{2\text{app}}/N_{2\text{app}})$ at 25°C, i.e. the ratio of the apparent oxygen permeability coefficient $P(O_{2\text{app}})$ to the apparent nitrogen permeability coefficient $P(N_{2\text{app}})$, of at least 1.2. The heterogeneous membrane can be industrially produced easily and conveniently with a high efficiency by a melt-extrusion film-forming step, a stretching step and a heat-setting step under specified conditions.

IPC 1-7
B01D 53/22; **B01D 69/00**; **B01D 69/12**

IPC 8 full level
B32B 5/18 (2006.01); **B01D 53/22** (2006.01); **B01D 67/00** (2006.01); **B01D 69/00** (2006.01); **B01D 69/08** (2006.01); **B01D 71/06** (2006.01); **B29C 49/00** (2006.01); **B29C 55/00** (2006.01); **B29C 55/04** (2006.01); **B29C 55/06** (2006.01); **B32B 7/02** (2006.01); **C08J 9/00** (2006.01)

CPC (source: EP US)
B01D 67/0027 (2013.01 - EP US); **B01D 69/08** (2013.01 - EP US); **B29C 55/065** (2013.01 - EP US); **B29K 2105/04** (2013.01 - EP US); **Y10T 428/2975** (2015.01 - EP US)

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Designated contracting state (EPC)
DE FR GB IT NL

DOCDB simple family (publication)
EP 0124028 A2 19841107; **EP 0124028 A3 19870729**; **EP 0124028 B1 19900314**; DE 3481587 D1 19900419; JP H0238250 B2 19900829; JP S59196706 A 19841108; US 4664681 A 19870512

DOCDB simple family (application)
EP 84104417 A 19840418; DE 3481587 T 19840418; JP 6990083 A 19830422; US 79373385 A 19851101